

B7-
C07702

conducting thermal energy between said two side rails and one of
said top and bottom covers.

REMARKS

Status of the Claims

Claims 1-26 are pending in the application. Claims 1-25 were rejected under 35 U.S.C. § 101 for “same invention” type double patenting. Claim 26 was rejected under the judicially created doctrine of “obviousness” type double patenting.

Amendment of the Claims

Applicants have amended independent claim 1 to recite that the plurality of electronic units have “at least one mounting feature fixed thereto, said at least one mounting feature being assembled to at least one of respective ones of said mounting locations.” Support for the amendments to claim 1 can be found in the specification at, for example, page 1, lines 12-14, page 2, line 13-14, and page 2, lines 16-18.

Applicants have amended claims 7, 10 and 13 to recite an apparatus including a “locking feature” for rigidly fastening said array housing to said installation frame. Support for such an amendment to claims 7, 10 and 13 can be found in the specification at, for example, page 3, line 9 and page 7, lines 21-24.

Applicants have amended claim 8 to recite ventilation units through “at least one of said rear wall and opposing side walls” and a plurality of heat transfer “features on” said side walls. Support for the amendments to claim 8 can be found in the specification at, for example, page 3, lines 3-5 and 11-16.

Applicants have amended claim 14 to recite a storage array module including “at least one resilient bumper mounted to at least one of said top, front, and bottom walls.” Support for the amendment to claim 14 can be found in the specification at, for example, page 4, lines 1-3 and page 7, lines 8-10.

Applicants have amended claim 15 to recite an apparatus with “at least one resilient thermal conductor.” Support for the amendment can be found in the specification at, for example, page 9, lines 3-5.

Applicants have amended claim 20 to recite an electronic unit having “at least one” first connector on an end thereof. Support for the amendment to claim 20 can be found in the specification at, for example, page 2, line 18 and page 5, lines 23-25. Claim 20 was also amended to recite “at least one” second connector. Support for such amendment to claim 20 can be found in the specification at, for example, page 2, lines 19-21. Applicants have also amended claim 20 to recite “at least one resilient thermal conductor.” Support for such amendment can be found in the specification at, for example, page 5, lines 10-14 and page 9, lines 3-5.

Applicants have amended claim 26 to recite electronic units having “at least one mounting feature fixed thereto, said at least one mounting feature being assembled to at least one respective ones of said mounting locations.” Support for such amendment to claim 26 can be found in the specification at, for example, page 1, lines 12-14, page 2, line 13-18.

Applicants have added new claims 27-38.

New Claims

Support for new claim 27 can be found in the specification at, for example, page 3, lines 11-16 and page 7, lines 7-8 and 30.

Support for new claim 28 can be found, for example, in the abstract at page 18, line 2, in the specification at page 8, lines 14-15, and in original claim 1.

Support for new claims 29-33 can be found in original claims 15-19 respectively.

Support for new claim 34 can be found in the specification at, for example, page 7, lines 1-2 and 8-12, and Figures 3 and 4.

Support for new claims 35 and 36 can be found in the specification at, for example, page 3, lines 27-28.

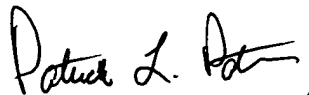
Support for new claim 37 can be found in the specification at, for example, page 2, lines 3-7.

Support for new claim 38 can be found in the specification at, for example, page 2, lines 3-7 and page 3, lines 27-28.

CONCLUSION

Claims 1- 38 are allowable. An indication of allowance is solicited at an early date.

Respectfully submitted,



Patrick L. Patras
Registration No. 37,695
Attorney for the Applicant

Dated: June 13, 2002

JENNER & BLOCK, LLC
One IBM Plaza
Chicago, IL 60611
(312) 840-8623

794133

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Please amend the claims as follows:

1. (Amended) An apparatus, comprising:

an array module having:

a housing having a rear plate and opposing side walls defining a module chamber,

5 a plurality of mounting locations on said side walls of said housing and in said module chamber,

a plurality of electronic units having at least one mounting feature[s] fixed thereto[along opposite sides thereof], said at least one mounting feature[s] being assembled to at least one of respective ones of said
10 mounting locations so that said housing supports said electronic units in said module chamber, each of said electronic units having at least one first connector,

a plurality of second connectors in said module chamber, each said first connector on said electronic units mating with a respective second
15 connector, and

at least one third connector on said housing connected to said plurality of second connectors to provide electrical connection to each of said, plurality of electronic units;

an installation frame having:

20

a rear wall and opposing side walls defining an installation chamber,

a plurality of resilient mounts fastened to external surfaces of said

installation frame, each said mount being arranged to be fastened

to a support platform to isolate said installation frame from

mechanical shock or vibration in said support platform,

25

at least one fourth connector on said installation frame, said at least one

fourth connector mating with said at least one third connector, and

at least one external connector connected to said at least one fourth

connector for providing electrical connection to said at least one

fourth connector; and

30

heat transfer means for transferring thermal energy between said electronic units

and a region exterior to said installation frame.

7. (Amended) The apparatus of claim 6 wherein said nested first and second rails

extend orthogonal to said rear wall of said installation frame and said rear plate of said array

housing and form a slot along the length of said rails, the apparatus further including

a [cam lock]locking feature [in the slot formed by said nested rails] for rigidly

5

fastening said array housing to said installation frame.

8. (Amended) The apparatus of claim 1 wherein said heat transfer means

comprises ventilation units through at least one of said rear wall and opposing side walls[said

rear wall] of said installation frame, and a plurality of heat transfer [fins on the external sides of]features on said side walls of said array module.

10. (Amended) The apparatus of claim 9 wherein said nested first and second rails extend orthogonal to said rear wall of said installation frame and said rear plate of said array housing and form a slot along the length of said rails, the apparatus further including

a [cam lock]locking feature [in the slot formed by said nested rails] for rigidly

5 fastening said array housing to said installation frame.

13. (Amended) The apparatus of claim 12 wherein said nested first and second rails extend orthogonal to said rear wall of said installation frame and said rear plate of said array housing and form a slot along the length of said rails, the apparatus further comprising

a [locking feature]locking feature [in the slot formed by said nested rails] for

5 rigidly fastening said array housing to said installation frame.

14. (Amended) The apparatus of claim 1 wherein said storage array module includes top, bottom and front walls enclosing said module chamber, and [a plurality of]at least one resilient bumper[s] mounted to at least one of said top, front, and bottom walls[and extending rearwardly of said rear plate and forward of said front wall].

15. (Amended) The apparatus of claim 1 wherein each of said plurality of electronic units is housed in an enclosure having a fifth connector on an end thereof, each said enclosure comprising:

a top cover;

5 a bottom cover arranged to mate with said top cover to form a hermetically sealed enclosure chamber;

a sixth connector on one of said top and bottom covers arranged to mate with said fifth connector;

at least two side rails for rigidly fastening to said electronic unit;

10 a resilient support connected to said at least [said] two side rails and to at least one of said top and bottom covers for resiliently supporting said electronic unit in said enclosure chamber, said resilient support being formed of a material having a high resistance to thermal conduction;

at least two thermal rails;

15 [a plurality of] at least one resilient thermal conductor [conductors each] having a first end permanently mounted to a respective one of said thermal rails and a second end permanently mounted to one of the group consisting of said side rails, said top cover and said bottom cover; and

a fastener removably mounting said thermal rails to another of the group

20 consisting of said side rails, said top cover and said bottom cover so that said thermal rails and resilient thermal conductors provide conduction of thermal energy between said side rails and one of said covers.

20. (Amended) An enclosure for an electronic unit, the electronic unit having [a] at least one first connector on an end thereof, the enclosure comprising:

a top cover;

a bottom cover arranged to mate with said top cover to form a hermetically sealed

enclosure;

[a] at least one second connector on one of said top and bottom covers arranged to

mate with said first connector;

at least two side rails rigidly fastened to the electronic unit;

a resilient support connected to said at least two side rails and to at least one of

said top and bottom covers for resiliently supporting the electronic unit in

said enclosure, said resilient support being formed of a material having a

high resistance to thermal conduction;

at least two thermal rails;

[a plurality of] at least one resilient thermal conductor[conductors each] having a

first end permanently mounted to a respective one of said at least two

thermal rails and a second end permanently mounted to one of the group

consisting of said side rails, said top cover and said bottom cover;

a fastener removably mounting said thermal rails to another of the group

consisting of said side rails, said top cover and said bottom cover so that

said thermal rails and resilient thermal conductors provide conduction of

thermal energy between said side rails and one of said covers.

26. (Amended) An apparatus, comprising

an array module having:

a housing having a rear plate and opposing side walls defining a module chamber,

5 a plurality of mounting locations on said side walls of said housing and in said module chamber,

a plurality of electronic units having at least one mounting feature[s] fixed

thereto[along opposite sides thereof], said at least one mounting

feature[s] being assembled to at least one respective ones of said

10 mounting locations so that said housing supports said electronic

units in said module chamber, each of said electronic units having

at least one first connector,

a plurality of second connectors in said module chamber, each said first

connector on said electronic units mating with a respective second

15 connector, and

at least one third connector on said housing connected to said plurality of

second connectors to provide electrical connection to each of said

plurality of electronic units;

an installation frame having:

20 a rear wall and opposing side walls defining an installation chamber,

a plurality of resilient mounts fastened to external surfaces of said
installation frame, each said mount being arranged to be fastened
to a support platform to isolate said installation frame from
mechanical shock or vibration in said support platform,
at least one fourth connector on said installation frame, said at least one
fourth connector mating with said at least one third connector, and
at least one external connector connected to said at least one fourth
connector for providing electrical connection to said at least one
fourth connector.

25